

REMARKS/ARGUMENTS

Prior to this amendment, claims 1-29 were pending. In this amendment, claims 1, 5, 8-9, 14, 16-17, 21, 23, and 27 are amended. Claim 13 is canceled and claim 30 is added. Thus after entry of this amendment, claims 1-12 and 14-30 will be pending.

Rejection under 35 U.S.C. § 103, DiGiacomo

Claim 1 is allowable over DiGiacomo as it fails to teach or suggest all the elements of claim 1. For example, claim 1 recites:

*removing the first abstract block from the first logic block in response to placement information that indicates a design goal would be improved by rearranging at least a portion of the user design; and
placing the first abstract block into a second logic block on the programmable integrated circuit, wherein the functional attribute of the first abstract block corresponds with a functional attribute of the second logic block, thus improving the design goal.*

DiGiacomo describes making groups (clusters) of components (unit, macro, and actual size components). *See DiGiacomo*, col. 11 lines 22-42. The Office Action has equated “macro” with “abstract block” and “cluster” with “logic block”. *See Office Action* mailed 5/22/06, bottom of page 2. Note that in present claim 5, the term “cluster” is used to denote a different claim element than term “logic block.” Thus, the cluster of DiGiacomo, as interpreted by the Office Action, is not a “cluster” as it pertains to the claims of the present invention.

Before clustering is done, DiGiacomo describes removing smaller components. *See DiGiacomo*, col. 9 lines 32-42. Clustering is described at col. 11 section 5. Since the smaller components are removed before a cluster is made, these smaller components are never placed into a cluster or first logic block and then removed from that cluster to be placed into another cluster. Additionally, the larger components that are placed into the clusters are not removed or placed into a new cluster, nor has an Office Action asserted such. Thus, DiGiacomo does not teach or suggest “*removing the first abstract block from the first logic block,*” as recited in claim 1.

For at least the reasons stated above, Applicant submits that claim 1 and its dependent claims 2-12 and 27-29 are allowable over the cited references. Applicants submit that independent claim 14, and its dependent claims 15-26, should be allowable for at least this same rationale.

Claim 5

In addition to being allowable for the same rationale as claim 1, claim 5 is allowable for additional reasons. For example, claim 5 recites:

determining whether placing an abstract block assigned to a particular circuit element into a specific logic block violates any of a set of design rules relating to that specific logic block, wherein the logic blocks are grouped into clusters; and

determining whether placing the abstract block into a cluster containing that specific logic block violates any of a set of design rules relating to that cluster.

As mentioned above, DiGiacomo only does one level of grouping while claim 5 recites a second level of grouping, i.e. a grouping of the logic blocks. In DiGiacomo, the components are only grouped into clusters and there is no other grouping. See DiGiacomo, col. 7 lines 7-16 and col. 11 lines 35-38. The Office Action asserts that this single step of grouping macros into clusters also teaches forming groups of clusters. See Office Action mailed 5/22/06, page 3. However, these two passages both only describe grouping macros into clusters and not forming groups of clusters.

The confusion may arise from the Office action equating the term “cluster” of DiGiacomo to be a “logic block”, and then trying to use the same term “cluster” of DiGiacomo to also be a “cluster” of the present invention. This would be incorrect as DiGiacomo only describes one level of grouping. Accordingly, DiGiacomo does not teach or suggest “*wherein the logic blocks are grouped into clusters*,” as recited in claim 5.

For at least these additional reasons, Applicant submits that claim 5 and its dependent claims 6-8 are allowable over the cited references. Applicants submit that independent claim 16, and its dependent claims 17 and 19-22, should be allowable for at least this same rationale.

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PATENT

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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